

MINUTES SUMMARY

Pinedale Anticline Working Group (PAWG)

9:00 a.m. to 3:30 pm, Tuesday, May 22, 2012,

8:00 a.m. to Noon, Wednesday, May 23, 2012

Rendezvous Conference Room/Pinedale Anticline Project Area (PAPA)

BLM Pinedale Field Office

Please refer to all handouts from the meeting for detailed descriptions of each presentation.

- May PAWG meeting was called to order at 9:00 a.m. on Tuesday, May 22, 2012 and adjourned at 3:30 pm.
- On Wednesday, May 23, 2012, the PAWG meeting resumed at 8 a.m. followed by a field trip to the PAPA. The field trip adjourned at Noon.
- Attendance:
 - Meeting on May 22: Mike Kramer, Paul Hagenstien, Stephanie Kessler, Aimee Davison, John Anderson, Eugene, Ninnie, Art Reese, Dave Vlcek
 - Not in attendance: Joy Bannon and Bart Meyers, Chair
 - BLM-PFO employees in attendance: Shane DeForest, Janet Bellis, Teresa Bredthauer (minutes).
 - Final meeting and field trip on May 23: All PAWG members were in attendance except Joy Bannon and Bart Meyers.

9:05 to 9:15 (INFORMATIONAL ITEM) Overview Agenda, Confirmation of Quorum, Review and approval of February meeting minutes.

- John Anderson was acting Chair in place of Bart Meyers. Stephanie Kessler had to leave before the afternoon session on May 22, 2012. After consulting the charter, it was concluded that there was a quorum and the meeting could proceed. Krispy Kream doughnuts provided by Stephanie Kessler's son who was doing a fund raiser.
- After consulting the Charter, it was determined that there was a Quorum and PAWG could proceed with the meeting. Stephanie also stated that she would be leaving at 1pm and would not be available to attend the afternoon portion of the meeting. Even with Stephanie gone during the afternoon meeting there would still be a quorum.
- No corrections to the agenda, accepted as presented at Paul Hagenstein's suggestion.
- John Anderson: For the field trip on Wednesday, meet here at 8 am (done by noon) and should be done by noon. Water will be supplied, dress appropriately. We will be taking three BLM vehicles. Everyone else will need to drive their own vehicles.
- Minutes corrections and additions: Eugene Ninnie's name was missing from the February meeting notes.
- Mike Kramer: The minutes are difficult to follow, would like to see more of a summary and not word for word notes. Two suggestions made by Teresa Bredthauer: To do meetings with microphones so the recording would pick up what was said much better, or do it like the city of Pinedale does and video the meetings and post to the website. Shane stated that

videotaping the meeting would be good, we just wouldn't post the 8 hour meeting to the web site because it would be much too long. February's meeting minutes were discussed and approved with corrections and amendments.

- Stephanie Kessler made a motion to accept the minutes, Paul Hagenstien seconded it, passed unanimously.
- Shane DeForest: Welcome to meeting, housekeeping information and welcome to new PAWG members:
 - Dave Vlcek : Retired, Pinedale resident for over 25 years, Profession Archeologist Resource Specialist, does consulting. "I am extremely concerned about what has been happening in Sublette County. I was here prior to the Jonah and Anticline development and all the changes that have occurred since then. A number of people encouraged me to join the PAWG and am happy to be a member of the PAWG. I hope to bring knowledge and experience."
 - Art Reese: "I am currently a consultant with USQ (Ultra, Shell, and QEP) and work on NEPA and wildlife issues. Prior to that, I worked for the WY Game and Fish for 25 years. After which I became Governor Garinger's Director of Federal Policy. After his transition out of office, I went into consulting a year later. Governor Friedental asked me to come back and become his Director of Cultural Resources. After about 2½ years I went back into to consulting. I applied to the PAWG because I thought it would be a valuable experience and I have a lot to add to PAWG because I participated in the redraft of the final SEIS ROD. I'm glad to be here."
 - Aimee Davison:
- Other introductions of presenters and public: Ryan Mcammon, Charis Tours, Merry Gamper WSO, Tony, Erica Tokarz, Phil Barnes Shell, Judy West, Pete Guernsey QEP, Angela Zivkovich, Shell, Joe Redmon, QEP. Shane Murphy, Brittany (*some names not audible on the recording*).

9:15 to 9:30 (INFORMATIONAL ITEM) DFO Report of progress on actionable items from February meeting, Shane DeForest, Field Manager, BLM Pinedale Field Office.

- Shane DeForest, Field Manager from the Pinedale BLM reported on the progress of actionable items from the February meeting (see handout from meeting).
 - Electrification of the Anticline The scoping period closed on February 6
 - NPL EIS
 - LaBarge EIS
 - Rands Butte Helium Plant
 - Annual Drilling Plans, Anticline
 - Well spud report as of May 1, 2012
 - PAPO Reclamation Update
 - Mitigation Projects
 - Wildlife Monitoring & Mitigation Plan
 - PAPO Website
 - PAPO Board Meeting in Pinedale on May 3 and Mesa Field Trip on May 2
 - 2012 Resource Projects
 - Landscape Planning
 - South LaBarge Ecological Site Inventory

- Wyoming Range Front Aspen Regeneration Project
 - Muddy Creek Vegetation Treatment
 - Anticline Mesa Fertilization
 - LaBarge Mule Deer Habitat Enhancement Wildlife Friendly Fencing
 - Lander Road Interpretive
 - Resource Monitoring Overview
 - Sage grouse winter concentration
 - Aerial lek Searches
 - Winter Range Closure
 - Staffing Update
 - Calendar
- Motion by Dave Vlcek to provide the public comment for the proposed adaptive management change to the PAWG, for the PAWG's review. We will make a decision from there whether or not you would like to provide comments. Stephanie Kessler seconded, motion passed unanimously.

9:30 to 10:00 (INFORMATIONAL ITEM) Report on the AMEC Hydrogeologic Data Gaps report scheduled for public release on May 18th, Merry Gamper, Physical Scientist, BLM Wyoming State Office.

Discussion:

All information is located on the web.

http://www.blm.gov/wy/st/en/field_offices/Pinedale/anticline/resources/water.html Under the FDIS implementation page there is a water page. It has every document that we have produced. There is also an FAQ to help understand the data.

Q: When you talk about the type of well pad, are you suggesting that if there were problems from the well pad it is going to be a long time before we might see it move through the aquifer?

A: When you talk about porosity and hydraulic conductivity, I was trying to make the size comparison for you. Remember that you may have fractures in the Wasatch Formation that are not mapped anywhere by anybody which could cause water to move faster in those areas. The mudstone, shale, and siltstones can cause the groundwater to move more slowly. Vertical accuracy/horizontal accuracy is within a 1,000 feet. We have areally good concentration of data along the crest. Obviously we couldn't cover the whole anticline. We are in a high cold desert and we lose a lot of water to evapotranspiration.

10:00 to 10:30 (INFORMATIONAL ITEM) Update on the Upper Green River Basin 2011-2012 Winter Ozone Study 2011, Ryan McCammon, Monitoring Section, Wyoming Department of Environmental Quality.

Discussion:

A: We had more snow last year than we did in 2008. That's why we had elevated ozone in 2011.

Q: Do you think the high snow cover in 2011 has something to do with the ozone moving into into the Wyoming Range?

A: Keep in mind we didn't have the monitor till that year. If you take snow out of the equation what you have is a daily nightly flow pattern where at night and into the pre-dawn hours you get northwest winds that switch and come out of southeast. You get enough of that going on day after day you are going to a buildup.

Q: So snow doesn't have much to do with how the ozone is formed but that it actually stays in a stable state?

A: Snow helps keep the inversion in. Snow enhances the UV going into the production of ozone in terms of flow patterns.

Q: Did you look at snow patterns and inversions and not snow but weather the wind had any effect:

A: We didn't go in depth with that kind of a day after day, year after year you see patterns develop and persist. It's more of an intuitive thing where we have the conditions setting up the snow cover. We know what the winds are going to do, absent any major snow storm coming in to blow everything around. There are a lot of things going on in terms of analyzing wind patterns in the Basin.

Q: Did we have more of the right kind of weather, not in terms of snow but in terms of the inversion from the wind last year (2011) than we did in 2012?

A: We only had 2 action days.

Q: Would we have more of those in 2011?

A: The pattern was similar to 2011, but even though we had similar conditions as in 2011, we didn't see a strong high pressure over the basin and it was not nearly as cold this year. We had quite a bit of snow out there. We had less snow than we had in 2011 but we had more than we had in 2010.

Q: Dr. Fields Research seemed to indicate a connection between the V-Tech or Aromatic associated COC ozone, I'm not a chemist but how does that Correlate?

A: I'm not a chemist either, I'm a meteorologist. I can't really answer that question. Each VOC has a different reactive. You may have a very small amount but can be very reactive.

10:45 to 11:15 (INFORMATIONAL ITEM) Update on the Pinedale Anticline Air Quality Assessment, results of the PAPO/UW funded study. Jeff Soltis, Associate Research Scientist, Department of Atmospheric Science, University of Wyoming.

Discussion:

Q: During the high ozone reading it was noted that the ozone's levels continued on into the night. We measured ozone levels into the later hours too. The last times that happened was in 2011 and in 2008 when it stayed for a couple of days. It was high in the morning and was high overnight, mostly to do with the inversion. I can't say for sure.

11:15 to 11:45 (INFORMATIONAL ITEM) Update on WDEQ's Upper Green River Basin Air Quality Task Force, Carmel Kail, Task Force Member, Pinedale, Wyoming.

No questions

1:00 to 1:45 (INFORMATIONAL ITEM) Update on the status of the Nonattainment designation and its impacts and implications for BLM projects, Charis A. Tuers, Air Resource Specialist, Bureau of Land Management, Wyoming State Office.

No questions

1:45 to 2:15 (INFORMATIONAL ITEM) Update on the preliminary determination of meeting Visibility Milestone #2 and future actions for making the Final determination for that milestone, Charis A. Tuers, Air Resource Specialist, Bureau of Land Management, Wyoming State Office.

No questions

2:30 to 3:00 (INFORMATIONAL ITEM) Update on Visibility Milestone #3 modeling and future actions for Ozone modeling to meet PAPA ROD requirements, Charis A. Tuers, Air Resource Specialist, Bureau of Land Management, Wyoming State Office.

No questions

3:00 to 3:15 (PUBLIC COMMENT) Open to public comments regarding the above meeting topics or matters covered in the charter of the PAWG which is mitigation and monitoring of the public resources on the Pinedale Anticline.

3:15 to 3:30 (DISCUSSION OF NEXT MEETING) Agreed upon 2012 meeting schedule and focus topics.

- Aug 7-8 WILDLIFE (field tour, habitat improvements/mitigation treatments)
RECLAMATION (progress/reported accomplishments)
Nov (1 day) DATE and FOCUS NOT SELECTED (Nov 6 is Election Day)
- The next PAWG Meeting will be on August 7th and 8th. Items that will be discussed:
 - Renew / update mitigation and monitoring plan, What is in it: How it works
 - Review of funded projects and monitoring of these
 - WY Reclamation policy discussion and presentation
 - UW mitigation initiatives
 - Operators – Discuss ERRP
 - PAPA Discussion of Review restoration handbook
 - Report on ozone task force recommendations and DEQ Decisions
 - Elect a chair for PAWG
 - Date and focus of the November PAWG meeting
 - Field Tour
 - Fertilization treatment
 - Visit- discuss reclamation phases
 - Lander trail interp. Site
 - WYDOT overpass/underpass/Fence

– Mike Kramer moved to adjourn, Art Reese seconded, passed unanimously

3:30 ADJOURN for the Day

WEDNESDAY, MAY 23, 2012

8:00 to 8:30 (INFORMATIONAL ITEM) Presentation of a typical WDEQ site inspection for compliance of WDEQ permitted standards, Brandi O'Brien, Air Quality Engineer, WDEQ.

Discussion

Q: Do you visit every site every year?

A: No there is no way that we could visit every well site every year.

Q: Are you tracking which sites that you visit?

A: Yes we do track the sites we visit. We mark the sites on a map. A database is also maintained daily of what we do. Our goal is to do 20 inspections a month. Sometimes we get up to 30 in a month, sometimes it is just 18. We are at the mercy of the wind. We cannot go out on a windy day.

A: When visiting a site, maintenance records are checked. Engines are tested quarterly. Most emissions come from the engines. Leaks can be seen with the flair camera. It doesn't always see small leaks.

Q: What about road closures to the Anticline? Do you have to observe them as well?

A: There are round about ways to get to sites to do the work if it is necessary, but generally we stay away from those areas and other areas are inspected. There are 12 well pads that are behind locked gates.

8:30 to Noon (DISCUSSION/FIELD TRIP) Visit a well pad with production equipment to show emission controls, a drilling site in which Selective Catalytic Reducers (SCRs) have been installed, and discuss the Liquids Gathering System (LGS), Angela Zivkovich, SWEPI, Kevin Williams, QEP, and Brandi O'Brien, Air Quality Engineer, WDEQ.

Noon: ADJORN

A newspaper article, written about the May PAWG Meeting, by Travis Pearson (Pinedale Roundup), has been included at the end of the notes to show the perspective that was presented to the PAWG.

PAWG meeting recaps air quality discussion

By Travis Pearson



Roundup file photo

The mobile laboratory used by Jeff Soltis and Robert Field has proved instrumental in collecting air quality data in the Upper Green River Basin.

PINEDALE – The Pinedale Anticline Working Group (PAWG) held a meeting on Tuesday and a field trip on Wednesday to discuss air quality and overall updates on the Pinedale Anticline Project Area (PAPA).

At least six presentations focused on air quality; most of the informational items updated attendees and PAWG members on studies of ozone formation and the current status of air in the Upper Green River Basin.

Jeff Soltis, an associate research scientist with the University of Wyoming's (UW) Department of Atmospheric Science, presented findings from a Pinedale Anticline Project Office (PAPO)-UW joint-funded project since 2008.

The study used a mobile laboratory, online precursor analysis and volatile organic compound (VOC), benzene, toluene, ethylbenzene, and xylenes (BTEX) and nitrogen oxides (NOx) spatial testing.

The research team first came to the area in 2008 when different groups were gaining an interest in the ozone formations occurring here. One of the first things they set out to find was whether pollutants were coming to Sublette County from outside the area as many have suggested.

In one of the first slides, Soltis showed the team found that ozone "formed here and possibly transported out," often to the Wyoming Range to the northwest.

The group also found high levels of methane and of non-methane hydrocarbons, essentially natural gas, overnight using the mobile lab in the area.

"So every single night, when the atmosphere calms down, things build up in this area," Soltis explained.

In 2010-11, the team compiled findings using its home base at South Boulder Road and the mobile laboratory from the harsh winter with many ozone action days.

"We can see that we also got really elevated methane, non-methane hydrocarbons in the area," he said, pointing to the graph and adding, "These are quite a bit higher than standard methane levels."

In general, the ambient air the research team tested "fairly closely matched" wet-gas analysis. This means the group found higher levels of BTEX.

"In the air, we were measuring higher lev-

els of those different items," Soltis said.

Two profiles, natural gas and produced water, create ozone.

"So we think we have two mechanisms that can form ozone in the area, so we just need to pick up the strengths and the effects that each of these mechanisms have on this formation," he added.

The group found higher levels of these chemicals closer to production while driving around with the mobile lab.

"What we find, once again, is the means are generally higher near development, which is what you'd expect," Soltis said.

Despite much of the helpful data, the "why" of ozone continues in many ways to elude the scientists. Soltis said the research team is not yet ready to speculate on why ozone spiked during different time periods, and the group has a funding request, whether the money come from PAPO or elsewhere, for \$80,000 to continue its research.

A meteorologist with the monitoring section of the Wyoming Department of Envi-

ronmental Quality (DEQ), Ryan McCammon, also worked with a team that monitored meteorological conditions but did not concretely say what's creating ozone formation.

The team came to the region in 2011, and conditions seemed right for ozone, which the group monitored using several weather balloons and a tall tower.

"We knew we were going to have some big events. We deployed, and, lo and behold, we had some high values," McCammon said.

During this 2010 intensive two-week research window, the air quality was affected by abundant snow, light winds and cold weather.

In 2011, though, the group "didn't see anything in terms of elevated ozone."

"We had the snow; the snow was there this year. We just didn't see elevated ozone values," McCammon said.

Why these events occur under the conditions they do will be a continuing point of emphasis when it comes to air quality in the PAPA and Sublette County's pursuit of reach-

ing national air quality standards.

Also at the meeting:

- Carmel Kail presented on behalf of the Upper Green River Basin Air Quality Citizens Advisory Task Force, which has held three meetings to discuss and work on air quality issues.

Kail updated PAWG members on progress of the task force, and she also gave a "personal presentation" on takeaway points from the meetings.

One of the central themes of her presentation was the new standard for operators enacted by the DEQ in 2010, which many of the operators' older infrastructure does not comply with.

By Kail's estimation, local VOC emissions would drop by approximately 39 percent in the Upper Green River Basin if all equipment in the area were brought to these standards. Selective catalytic reduction engines and other technologies have helped significantly lower NOx, and continuing with this technology would be a large help to air pollutants in Sublette County.

- Charis Tuers, an air resource specialist with the Bureau of Land Management (BLM) Wyoming State Office, talked about air quality in regard to visibility milestones Nos. 2 and 3, as well as a lot of information about nonattainment.

Emissions from "plays" on federal lands must be quantifiable and conform to the area getting back to attainment, Tuers said.

This process involves some formulas and measurements of NOx and VOCs, not including phenomena out of BLM control, like wildfires.

These controls are designed to get the county back to attainment. If unsuccessful in this endeavor, a "slew" of new controls would kick in with an upgraded "moderate" designation.

"Bumping this area up to a higher level of classification would not be a good thing," she said.

- The next PAWG meetings are scheduled for Aug. 7 and 8 and will focus on wildlife habitat improvements and mitigation treatments, in addition to reclamation progress and reported accomplishments. ■

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